

Report on Frequency Management related topics

Presented to CGMS-53 Working Group I, Agenda item 6.1

This report will provide an overview on the outcome of the following meeting/conferences on issues of interest to CGMS:

- 43rd annual meeting of the Space Frequency Coordination Group (SFCG), 4 - 12 June 2024;
- 6th meeting of WMO Expert Team on Radio Frequency Coordination (ET-RFC), 26 – 28 February 2025.

Issues worth noting by CGMS WGI that were discussed and progressed at SFCG-43 and/or the 6th meeting of the WMO ET-RFC are the following:

- Update of remote sensing information in OSCAR and general proposals for modifications to the database from SFCG to WMO;
- Presentation of the activities of WGI TG on RFI detection, monitoring and mapping to SFCG;
- Long term continuity in information/knowledge transfer/exchange between SFCG and CGMS, including WMO, on frequency management topics of common interest (Action Item: WGI/A52.01);
- Progress in SFCG and WMO on their objectives/positions for WRC-27 agenda items of interest/concern to CGMS (as listed in the HLPP).

Update of remote sensing info in OSCAR/space and general proposals for modifications to the database from SFCG (1):

- SFCG AI 42/10: SFCG members to check the information about their passive and active sensors in the WMO OSCAR database and provide corrections and additions as needed.
 - SFCG Report 40 (SFCG Remote Sensing Information) updated and follow up Action item 42/10 was agreed.
 - SFCG believes that information on TT&C should be removed from the OSCAR database as it is not relevant for users, and that the frequencies useful for user (e.g., data downlinks) should be limited to the allocated band, and it should not reflect the exact frequencies used.
- Following-up on the note released to WMO, a meeting was held in October 2024 between responsible persons for the OSCAR database in WMO and SFCG representatives.
 - Comments/requests from SFCG members on OSCAR/Space were clarified.
 - Regarding TT&C links it was agreed to keep the information on the frequencies used for TT&C links out of the public version of OSCAR/Space. Instead, this information will be visible only for users with credentials.

Action: In this context the following actions on WMO were agreed:

- to consider long-term use/update of the TT&C frequency information;
- to consider which types of users with credential can access this information (e.g., only “admin”?).

Update of remote sensing info in OSCAR/space and general proposals for modifications to the database from SFCG (2):

- Regarding the view of SFCG that it would be useful to have in the OSCAR/Space database the frequency information about communication links that are relevant to users, (e.g. DCP and data downlinks) it was concluded that:
 - for public, unrestricted use, the data downlink frequencies should be listed in form of the allocated bands but not the central frequencies.
 - To implement this, WMO requires from reliable sources which frequency bands these bands are. For this, ESA was tasked to provide this information about frequency band allocations. For users with credentials WMO retains the exact frequencies of the data downlinks.
 - For users with credentials OSCAR/Space has three categories of satellite frequencies (<https://space.oscar.wmo.int/satellitefrequencies>)

Action: To ensure that all frequency information is correctly categorised, every agency contributing information to OSCAR/Space is tasked to review if the information within these 3 types of frequencies correspond to sensors, TT&C and data downlink info.

Presentation of the activities of WGI TG on RFI detection, monitoring and mapping to SFCG

The chair of the CGMS WG-I TG on RFI detection, monitoring and mapping, Beau Backus (NOAA), presented the best practices under development within this TG to SFCG-43.

- Number of participating agencies in this CGMS WGI TG is still limited. It would be beneficial if SFCG members that are not member of CGMS, would share their experience or approaches with the CGMS WG-I TG.
- It was observed that the developed best practices had some elements also relevant for the activities in SFCG under Action Item 43/16 (Updating the procedure for claiming and supporting protection from harmful interference affecting passive and active Earth Exploration-Satellite Service sensors).
 - This is an ongoing activity in SFCG regarding reporting of RFI cases SFCG members.
 - SFCG even maintains a page on RFI to sensors on the SFCG website.

Consideration on RFI other than to passive microwave sensors, for example to DCS, as reported by NOAA to SFCG-43, will be dealt with by SFCG under a dedicated agenda item at SFCG-44 in June 2025.

- As this issue is also of concern to CGMS, exchange between the two groups and potentially coordination of activities on this subject would be beneficial.

Information/knowledge transfer/exchange between SFCG and CGMS, including WMO (Action Item: WGI/A52.01) (1)

SFCG	WMO	CGMS
<p>Informal group of space agencies from around the world (larger membership than CGMS) solely dealing with frequency related issues.</p> <ul style="list-style-type: none"> ➤ Coordination of frequencies for new missions prior to the ITU coordination and notification process; ➤ Maintenance of a database on SFCG member missions for coordination; ➤ Establishment of reports, recommendations and decisions for the purpose of efficient frequency use among SFCG member agencies; ➤ Exchange of experience on RFI; ➤ Development of SFCG objectives for WRC agenda items of interest and concern to the member agencies. 	<p>With ET-RFC it provides a forum for WMO members to engage in frequency related matters of common interest.</p> <p>Through its participation from national weather services and space agencies it provides a useful mechanism for information/knowledge exchange.</p> <p>Regional workshop to inform/educate interested entities about frequency issues of importance to WMO.</p> <p>Development of the WMO positions for a WRC to feed this position paper into the national, regional and ITU preparatory processes for a WRC, even as an input to a WRC itself.</p> <p>WMO as a sister UN organisation to the ITU has a significant weight at a WRC.</p>	<p>WGI is traditionally more focused on the overall coordinated usage of frequency bands:</p> <ul style="list-style-type: none"> ➤ L-Band split between GSO & N-GSO MetSat systems and the coordination of the frequencies for dissemination of data to the users; ➤ The DCP channel plan for regional and international DCPs. <p>However, there were issues in the recent past where CGMS directly contributed to these processes, i.e. sending a letter from the CGMS member agencies to the ITU when the 24 GHz passive band was at stake at WRC-19 due to the identification of IMT-5G in the neighbouring frequency band.</p>

Information/knowledge transfer/exchange between SFCG and CGMS, including WMO (Action Item: WGI/A52.01) (2)

Action Item WGI/A52.01 called upon the CGMS-SFCG Liaison Officer to identify mechanisms to ensure long term continuity in information/knowledge transfer/exchange between SFCG and CGMS, including WMO, on frequency management topics of common interest.

Feedback from SFCG on Action Item WGI/A52.01:

The CGMS-SFCG Liaison Officer brought this question to the meeting of SFCG-43 in June 2024.

- SFCG concluded that the current concept with a CGMS-SFCG Liaison Officer works sufficiently well to exchange information on issues of mutual interest. SFCG currently does not see the need to change this approach and does not have any proposals for potential improvements.

Feedback from WMO ET-RFC on Action Item WGI/A52.01:

The CGMS-SFCG Liaison Officer brought this question to the meeting of WMO ET-RFC, 26-28 February 2025.

- ET-RFC concluded that the process is considered adequate to ensure a mutual reporting of activities. In case of a subject that requires more intense/frequent exchange, e.g. on a frequency related topic with potential severe impact, the mechanism might need to be reviewed and adjusted to appropriately responded to the issue at hand with additional mechanisms/actions.

WRC-27 Agenda Items of interest/concern to CGMS

Section 2.2.1 of the HLPP stipulates to facilitate an effective preparation of national and ITU-R regional groups' positions for the World Radiocommunication Conference (WRC) 2027 favourable for CGMS-related issues, in particular but not exclusively with regard to the:

- Establishment of protection for passive microwave sensors in the bands 50.2-50.4 GHz, 52.6-54.25 GHz and in bands above 86 GHz from unwanted emissions from active services in neighbouring frequency bands (WRC-27 agenda items 1.1, 1.3, 1.8 and 1.18).
- Possible new primary frequency allocations to EESS (passive) in the bands 4200-4400 MHz and 8400-8500 MHz for Sea Surface Temperature (SST) measurements to complement the SST measurements in the 6/7 GHz range (WRC-27 agenda item 1.19).
- Protection of the frequency bands 7450-7550 MHz, 7750-7900 MHz and 8025-8400 MHz, used for the downlink from MetSat and EO satellites, from possible future frequency usage by International Mobile Telecommunications (IMT) (WRC-27 agenda item 1.7).

Sections 4.1 to 4.5 of the corresponding paper provide a short overview on the relevant WRC-27 agenda items and the corresponding **SFCG preliminary objectives** from the 43rd annual meeting of the Space Frequency Coordination Group (SFCG), 4 - 12 June 2024, and the **preliminary positions of WMO** as updated at the recent 6th meeting of WMO Expert Team on Radio Frequency Coordination (ET-RFC), 26 – 28 February 2025.

To be considered by CGMS:

Actions proposed: CGMS is invited to note this report and

- provide feedback and information on its activities via the CGMS/SFCG Liaison Officer to SFCG-44 (June 2025) on any frequency related matter;
- respond to the question from WMO ET-RFC regarding potential prioritisation of WRC-27 agenda items included in the HLPP from operational perspective of MetSat systems.